REMARKS

Status of the Claims

Claims 1, 4-7, 10-17 and 26-30 are pending, with Claims 1, 15 and 28 being independent. Claims 10-14 have previously been withdrawn from consideration, and Claims 2, 3, 8, 9, and 18-25 have previously been canceled without prejudice. Claims 1, 15, and 28 have been amended. Support for the claim changes can be found in the original disclosure, and therefore no new matter has been added.

Requested Action

Applicant respectfully requests the Examiner to reconsider and withdraw the outstanding rejections in view of the foregoing amendments and the following remarks.

Claim Rejections

Claims 1, 7, 15, 17 and 26-30 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 6,324,217 (Gordon), in view of German Patent Application Publication 10,035,109 (Cho et al.). Claims 4-6 and 16 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Gordon in view of Cho and further in view of Japanese Patent Application Publication 2000-050263 (Asada et al.).

In response, while not conceding the propriety of the rejections, independent Claims 1, 15, and 28 have been amended. Applicant submits that as amended, these claims are allowable for the following reasons.

Independent Claim 1 relates to an image processing apparatus for encoding input motion-image data by using intra-frame coding and inter-frame coding, and encoding input still-image data as pictures for a predetermined period of time by using the same encoding method as the encoding method of the motion-image data. The image processing apparatus comprises a memory unit configured to store the input still-image data, a quantization unit configured to quantize image data, a control unit configured to control a quantization method in said quantization unit so that a quantization step becomes smaller than a quantization step for motion-image data when still-image data stored in said memory unit is quantized, and an encoding unit configured to generate intra-frame coded data and inter-frame coded data from still-image data quantized by said quantization unit, and generate from one still image, a plurality of groups of pictures in which each group of pictures includes the intra-frame coded data and a plurality of the inter-frame coded data.

Claim 1 has been amended to recite that the encoding unit generates the inter-frame coded data, which includes bi-directionally predictive frames, by encoding a difference between the input still-image data and predicted data converted from the generated intra-frame coded data and inter-frame coded data previously, and sets a start group of pictures among the generated plurality of groups of pictures as a closed group of pictures.

By this arrangement, the inter-frame coded data generated from the still image can includes B-pictures so that a high-resolution display of the encoded still image can be displayed. Such a high resolution display is possible because the coding error can be reduced by continuously performing inter-frame coding to generate P-frames and B-frames from the I-frame.

In contrast, the citations to Gordon and Cho et al. are not understood to disclose or suggest an encoding unit that generates the inter-frame coded data, which includes bi-directionally predictive frames, by encoding a difference between the input still-image data and predicted data converted from the generated intra-frame coded data and inter-frame coded data previously, and sets a start group of pictures among the generated plurality of groups of pictures as a closed group of pictures, as recited by amended Claim 1.

Rather, the Gordon patent is understood to disclose a movie information screen generator including a frame encoder 110 and a group of pictures (GOP) replicator 120, where the encoder is understood to be disclosed to be an MPEG1 or MPEG 2 video encoder, and the replicator is understood to include a buffer 121 that stores still image I-frames so that the replicator inserts one or more NULL P-frames after an I-frame to form a GOP. In Gordon, the inter-frame coded data is understood to be comprised solely of P-frames, i.e., predictive coded frames; nothing in the citation is understood to refer to bi-directionally predictive frames or B-frames. Moreover, Gordon is understood to disclose the generation of an I-frame by encoding a still image and the generation of GOP by adding N-numbers of P-frames (NULL data). But, Gordon is not understood to disclose or suggest the display of a high-resolution still image by generating B-frames. Furthermore, Gordon is not understood to disclose a structure: 1) to generate, as encoded data of a still image, the inter-frame coded data which includes bi-directionally predictive frames; 2) to generate N-numbers of NULL P-frames by a prediction, but understood to only discuss that the prediction is a forward prediction from I to N and to generate the inter-frame coded data by encoding a difference between the input still-image data and predicted data converted from

the generated intra-frame coded data and inter-frame coded data previously; or 3) to set a start GOP among a plurality of GOPs generated from a still image, as a closed GOP.

The Cho et al. publication understood to merely disclose a system for transmitting still images comprising a video encoder having a number of elements including a core part 300 and a quantizer so that the quantizing value of the core part is variable, and so that a) when the core part encodes a moving picture, the quantizing value of the core part is variable, and b) when the core part encodes a still picture, the quantizing value is fixed, and also is lower than the quantizing value at which moving pictures are encoded.

Since amended Claim 1 recites at least one feature not understood to be disclosed or suggested by the citations to Gordon and Cho et al., Applicant submits that the Office has not yet established a prima facie case of obviousness against amended Claim 1. Therefore, Applicant respectfully requests that the rejection of Claim 1 be withdrawn. And because independent Claims 15 and 28 have been amended in a similar manner, they are submitted to be allowable for similar reasons. Therefore, Applicant respectfully requests that the rejection of Claims 15 and 28 be withdrawn.

The dependent claims are also submitted to be patentable, due to their dependency from the independent base claims, as well as due to additional features that are recited. Individual consideration of the dependent claims is respectfully solicited.

Conclusion

In view of the above amendments and remarks, the application is now in allowable form. Therefore, early passage to issue is respectfully solicited.

Any fee required in connection with this paper should be charged to Deposit Account No. 06-1205.

Applicant's undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,

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